

SMART SELF-CALIBRATING ACOUSTIC TELEMETRY SYSTEM

ABSTRACT

An acoustic telemetry system for use in a borehole achieves both bi-directional and multi-hop communications without need for a wireline. Each step in the communications link comprises a processor and transceiver, which communicate with adjacent transceivers to achieve self-optimization. During operation, if communications deteriorate, each pair of transceivers can re-initiate optimization and attempt to reset parameters to achieve improved communications. Similarly, the system can also re-calibrate periodically to assure that optimal conditions are maintained.